THE PREVALENCE OF OBESITY AND THE KNOWLEDGE, ATTITUDE AND PRACTICE OF HEALTHY LIFESTYLE AMONG THE ADULT POPULATION IN KAMPUNG BANYUK, KAMPUNG KERTO AND KAMPUNG LANGUP

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Supervisors
Assoc Prof Dr Kamaluddin Bakar
Assoc Prof Dr Md Mizanur Rahman

Faculty of Medicine and Health Sciences
UNIVERSITI MALAYSIA SARAWAK
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Name list of students involved

No.	Name	Matric number
1.	Norhaslina bt Rosli	21840
2.	Chai Siew Pei	23256
3.	Gerald Sim Lai Meng	23537
4.	Lee Lian Thai	23826
5.	Mariana anak Metaw	23958
6.	Muhammad Izwan bin Azlin Shah	24213
7.	Muhammad Najmi Na'imullah bin Rahim	24219
8.	Norsuhaila binti Hazman	24502
9.	Nurulhuda bt Azman Tan	24782
10.	Arnold Lee Leong Chai	25924
11.	Ashvini a/p Sivabalan	25931
12.	Bong Sing Kock	26006
13.	Dinesh a/l Kerishnan	26179
14.	Fatehah Izwani bt Idris	26285
15.	Fidya bt Zamri	26313
16.	Fung Mei Jiun	26334
17.	Ho Tze Yung	26432
18.	Hon Shu Ann	26436
19.	Lee Mei Funn	26685
20.	Margeret Jong Shu Yi	26809
21.	Muhd Zarif b Mohd Amin	27087
22.	Noor Syafatin Azmin binti Abdul Safar	27336
23.	Nor Atikah binti Mohamad	27382
24.	Nur Edayah binti Ibrahim	27603
25.	Nur Hazwani binti Abdul Rahman Sebli	27648
26.	Siti Syuhada binti Rosman	28344
27.	Sofina Azurin binti Soffian Chen	28363
28.	Vivian Wong Chee Yien	28581
29.	Wong Syn Hwan	28666

DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Universiti Malaysia Sarawak or other institutions.

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ABSTRACT

Background Obesity has become a great public health concern and preventive measures need to be done.

Objective The objective of this research is to determine the prevalence of obesity and their knowledge, attitude and practices (KAP) towards a healthy lifestyle among the residents in Kampung Banyok, Kampung Kerto and Kampung Langup.

Methods A cross-sectional study was done among 126 randomly selected villagers aged 18 years and above from the three selected villages. They were interviewed based on a questionnaire and their body mass index (BMI) was calculated.

Results It was found that more than half of the respondents are obese. Among the respondents, for the healthy lifestyle component, the level of good KAP is 69.2%, 46.8% and 60.3% respectively. As for obesity component, the level of good KAP is 60.3%, 54% and 54.8% respectively. Among the obese respondents, the level of knowledge and attitude on healthy lifestyle and obesity is better. Obese respondents have better obesity preventive practice while the non-obese respondents have better practice on healthy lifestyle. The only significant correlation noted was between knowledge and practice on obesity albeit a negative one.

Conclusion The level of knowledge and attitude and practice on healthy lifestyle among the obese respondents are encouraged but more effort in the preventive practice of obesity should be done to reduce the prevalence.

KELAZIMAN OBESITI DAN TAHAP PENGETAHUAN, SIKAP DAN AMALAN CARA HIDUP SIHAT DALAM KALANGAN POPULASI ORANG DEWASA DI KAMPUNG BANYUK, KAMPUNG KERTO DAN KAMPUNG LANGUP

ABSTRAK

Latar belakang Masalah kegemukan telah menjadi masalah kesihatan utama dan langkah-langkah untuk menangani masalah ini harus dilakukan.

Objectif Objektif kajian ini ialah untuk menentukan tahap kelaziman obesiti dan pengetahuan, sikap dan amalan (KAP) gaya hidup sihat dalam kalangan penduduk kampung Banyok, Kerto dan Langup.

Cara pelaksanaan kajian 'Cross-sectional study' telah dijalankan terhadap 126 penduduk kampong dari kampung-kampung terpilih. Mereka telah diinterviu berdasarkan borang soal selidik dan pengiraan 'body mass index (BMI)' telah dijalankan.

Hasil kajian Secara keseluruhannya, lebih daripada setengah responden adalah obes. Dalam kalangan responden, untuk komponen cara hidup sihat, tahap KAP yang baik adalah 69.2%, 46.8% and 60.3% manakala untuk kompenen obesity, tahap KAP yang baik adalah 69.2%, 46.8% and 60.3%. Dalam kalangan responden yang obes, tahap pengetahuan, sikap untuk komponen cara hidup sihat dan obesity adalah lebih baik. Responden yang obes mempunyai amalan pencegahan obesity yang lebih baik manakala responden yang bukan obes mempunyai amalan cara hidup sihat yang lebih baik. Berdasarkan hasil kajian, satu-satunya kebarangkaitan yang didapati adalah di antara pengetahuan dan amlan pencegahan obesity dan ia adalah kebarangkaitan yang negatif.

Kesimpulan Tahap pengetahuan, sikap dan amalan untuk cara hidup sihat dalam kalangan responden obes adaah menggalakkan tetapi amalan pencegahan obesity harus dipertingkatkan untuk mengurangkan kelaziman obesity.

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List of Abbreviations

CDC	Centers for Disease Control and Prevention
CPG	Clinical Practice Guidelines
CSTF	Canadian Standardized Test of Fitness
MASO	Malaysian Association for the Study of Obesity
MOH	Ministry of Health
NHMS	National Health and Morbidity Survey
NSP-NCD	National Strategic Plan for Non-communicating Disease
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

1.1 Background Information

Obesity is a worldwide challenge as prevalence of this problem in both developed countries and developing countries is increasing. In 2009-2010, 33.7% of U.S. adults were obese (Ogden *et al.,* 2012). However, in Malaysia a survey regarding body mass index (BMI) of adults was carried out and it revealed 12.1% were obese (Azmi *et al.,* 2009). National Health Survey and Morbidity III in Malaysia (2008) reported that 2.9% of adult males were obese while 5.7% adult females were obese. Based on WHO (1998) classification of BMI, BMI $\geq$ 30kg/m2 is classified as obese and BMI $\geq$ 25-29.9 kg/m2 is overweight. It was also reported that there was a difference between rural and urban populations and Malays and Indians were more obese as compared to Chinese (NHMS, 1996). Obesity was not only confined to one age group as it may affect children as well. Globally, in 2010 the number of overweight children under 5 is estimated to be over 42 million (WHO, 2010).

Obesity is defined as abnormal or excessive fat accumulation that presents a risk to health (WHO, 2006). A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of his or her height (in meters) (CDC, 2011). Obesity is related to age, sex, social class and cultural background (O'Dea, 2008). In developed countries, obesity is more prevalent in lower than higher income groups (CDC, 2009). Prevalence rates therefore will vary with methodology, population characteristics and obesity definitions. There are abundant of causes which may eventually lead to obesity. Genetics, lifestyle including exercise, smoking and diet, health conditions such as hypothyroidism and Cushing syndrome, medicines can lead to increase in BMI index and the most often causes of overweight and obesity is lack of energy balance (National Heart, Lung

and blood Institute, 2012). The main principles to maintain a healthy weight is to have a balance calories in and calories out.

Besides that, obesity is a complex medical problem which will increase the risk of various health conditions including hypertension, adverse lipid concentrations, cancer and type 2 diabetes mellitus (Wilborn *et al.,* 2005). The health risks associated with obesity is estimated by the Relative Risk (RR) (CPG, 2003). The relative risk of developing Type 2 Diabetes Mellitus, Hepatobiliary disease, Dyslipidemia, Metabolic syndrome, breathlessness and sleep apnea is more than 3 (RR >3) whereas the relative risk of developing coronary artery disease, cerebrovascular disease and cardiac failure are moderately increased (RR 2-3). Moderate weight loss (10% to 15% of body weight) has been shown to decrease health risks and medical problems in obese patients (Newman, 2009). It was explained that this is due to improvements of their heart function, blood pressure, glucose tolerance and lipid profiles, as well as decreased requirements for medication and decreased postoperative complications.

1.2 Problem Statement

Obesity represents a state of excess storage of body fat. However, because differences in weight among individuals are only partly the result of variations in body fat, body weight is a limited, although easily obtained, index of obesity. Although several classifications and definitions for degrees of obesity are accepted, the most widely accepted are those from the WHO, based on BMI. The WHO designations include the following grade 1 overweight (commonly and simply called overweight) in which BMI of 25-29.9 kg/m^2 , grade 2 overweight (commonly called obesity) in which BMI of 30-39.9 kg/m^2 and lastly grade 3 overweight (commonly called severe or morbid obesity) in which BMI greater than or equal to 40 kg/m^2.

Obesity is also associated with host potential comorbidities that significantly increase the risk of morbidity and mortality in obese individuals. There are also several diseases that risk towards the obese individuals such as metabolic syndrome, type 2 diabetes, dyslipidemia, coronary heart disease, osteoarthritis, stroke, depression, non-alcoholic fatty liver disease, infertility (women) and erectile dysfunction.

The aetiology of obesity is far more complex than simply an imbalance between energy intake and energy output. Possible factors in the development of obesity include the following metabolic factors, genetic factors, level of activity, endocrine factors, race, sex, and age factors, ethnic and cultural factors, socioeconomic status, dietary habits, smoking cessation, pregnancy and menopause, psychological factors, history of gestational diabetes and lactation history in mothers.

Globally, obesity is recognized as the 6th most important risk factor contributing to the overall burden of disease. Ismail *et al.,* (2002) found that Malaysia has been experiencing a rapid phase of industrialization and urbanization in recent decades and has often been recognized as a role model for developing economies. At the population level, a high prevalence of obesity results from a complex interaction between changes in the population's lifestyle. A study was undertaken to assess the recent data on Malaysian adult body weights and associations of ethnic differences in overweight and obesity with comorbidity risk factors, and to examine measures of energy intake, energy expenditure, basal metabolic rate (BMR) and physical activity changes in urban and rural populations of normal weight. The NHMS data revealed that in adults, 20.7% were overweight and 5.8% obese, the prevalence of obesity was clearly greater in women than in men. In women, obesity rates were higher in Indian and Malay women than in Chinese women, while in men the Chinese recorded the highest obesity rebalances followed by the Malay and Indians. Studies on normal healthy subjects indicated that the energy intake of Indians was significantly lower than that of other ethnic groups. In

women, Malays recorded a significantly higher energy intake than the other groups. Urban male subjects consumed significantly more energy than their rural counterparts, but this was not the case in women. In both men and women, fat intakes were significantly higher in Chinese and urban subjects.

1.3 Significance of the study

Obesity is a growing nationwide problem and of deep concern. It has developed and become a major public health problem, in Malaysia. In order to curb this problem, the prevalence of obesity must be studied in relation to the knowledge, attitude and practice of a healthy lifestyle among us.

Based on the MASO 2009 Conference, WHO has indicated that obesity, is a chronic disease that does not exclude all age groups. Furthermore, the prevalence of obesity is moving upwards in Malaysia and much more serious in comparison to other surrounding countries. Based on the statistics obtained from the study by MASO, the trend of obesity is increasing and is something to be looked heavily upon. The NHMS revealed that in 1996, 1 in 5 adults were either overweight or obese and in 2006, this figure increased to 2 in 5 adults. A number from 1 to 2 might seem small, but when converted to a percentage, it is a significant increase of 22%. Hence this is something serious to be looked upon (MASO, 2009).

In conclusion, this study is important to curb the prevalence of obesity, and also to assess the knowledge, attitude and practice of a healthy lifestyle in Kampung Banyok, Langup and Kerto to counter against the up growing obesity trend.

1.4 Objectives of Study

1.4.1 General objective

The objective of this research was to determine the prevalence of obesity and their knowledge, attitude and practices towards a healthy lifestyle among the residents in Kampung Banyok, Kampung Kerto and Kampung Langup.

1.4.2 Specific Objectives

The specific objectives of this study were to:

1.4.2.1 Assess the socio-demographic characteristics of the villagers in Kampung Banyok, Kampung Kerto and Kampung Langup;

1.4.2.2 Assess the prevalence of obesity among the villagers in Kampung Banyok, Kampung Kerto and Kampung Langup;

1.4.2.3 Assess the level of knowledge, attitude and practice towards a healthy lifestyle among the villagers in Kampung Banyok, Kampung Kerto and Kampung Langup.

1.4.2.4 Determine the relationship between obesity and their level of knowledge, attitude and practice of a healthy lifestyle.

1.4.2.5 Determine the relationship between socio-demographic characteristics and prevalence of obesity

1.5 Research Questions

- What is the prevalence of obesity among the adult population in Kampung Banyok, Rumah Panjang Kerto and Rumah Panjang Langup?
- What is their level of knowledge, attitude and preventive practice towards obesity?
- What is their level of knowledge, attitude and practice towards a healthy lifestyle?

1.6 Hypothesis

- There is a significant relationship between Knowledge, Attitude and Practice of healthy lifestyles in relation towards the prevalence of obesity.

1.7 List of Variables

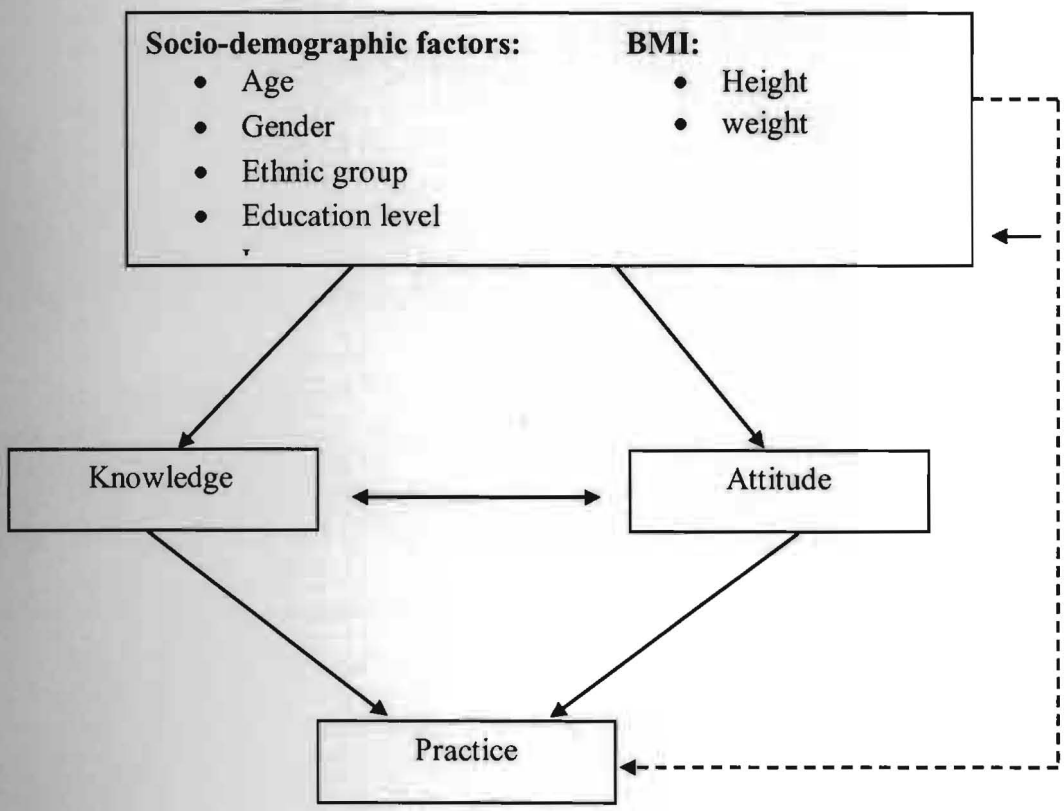
1.7.1 Independent Variables

- Age
- Gender
- Ethnic group
- Highest educational level
- Occupation
- Household income
- BMI

1.7.2 Dependent Variables

- Knowledge
- Attitude
- Practice
- Prevalence of obesity

1.8 Conceptual Framework



1.9 Operational Definitions

Obesity: An increase in body weight due to excessive accumulation of fat.

Healthy lifestyle: A way of living that helps to enjoy life by being healthy physically.

Knowledge: The state or fact of knowing, or familiarity, or awareness, or understanding gained through experience or study. It can also be said as specific information about something.

(a) *Good knowledge*: Grade for respondents who score equal to or above the mean level of knowledge.

(b) *Poor knowledge*: Grade for respondents who score below the mean level of knowledge.

Attitude: The way of thinking, which influence one's behavior towards a disease.

(a) *Positive attitude*: Grade for respondents who score equal to or above the mean level of attitude.

(b) *Negative attitude*: Grade for respondents who score below the mean level of attitude.

Practice: The behaviour and action taken by respondents in response to the desire to seek knowledge, diagnosis and treatment of diabetes, and steps taken for the prevention of diabetes.

(a) *Good practice*: Grade for respondents who score equal to or above the mean level of practice.

(b) *Poor practice*: Grade for respondents who score below the median level of practice.

Monthly income: It refers to the monthly income of the respondent.

(a) *Low household income*: Total income of RM500 or less in a month's time.

(b) *Moderate household income*: Total income from RM501 to RM1000 in a month's time.

(c) *High household income*: Total income of RM1001 or more in a month's time.

Level of education: Categorization of respondents' knowledge level.

(a) *Illiterate*: Never been to any school

(b) *Primary education*: Standard 1 – 6

(c) *Secondary education*: Form 1 – 6 and matriculation

(d) *Tertiary education*: College, university, graduate and postgraduate

Risk factor: The possibility of suffering harm or loss; danger or to expose to a chance of loss or damage; hazard.

Sign & Symptom

(a) Sign: an objective evidence of disease especially as observed and interpreted by the physician rather than by the patient

(b) Symptom: subjective evidence of disease or physical disturbance observed by the patient

CHAPTER 2: LITERATURE REVIEW

2.1. Prevalence of Obesity

In this 21st century, as standards of living continue to rise globally; weight gain and obesity have become the issues of concern for the nation as it pose a growing threat to health in countries all over the world. Indeed, the escalating prevalence of obesity in the world has replaced the more traditional public health concerns. According to Khor (2012), it is estimated that more than 1.1 billion adults worldwide are overweight, and 312 million of them are obese. In addition, at least 155 million children worldwide are overweight or obese (Khor, 2012). WHO (2003) also stated that it is estimated, 35.8 million (2.3%) are overweight or obese. Unfortunately, there are at least 2.8 million people in the world who die each year as a result of being overweight or obese.

Unfortunately, countries in Asia are not spared of this social issue, obesity. Khor (2012) showed the prevalence of obesity in Singapore is 6.9%; 2.4% in the Republic of Korea and Indonesia. In addition, according to Tee (2002), his study on the prevalence of overweight and obesity in five Asian cities which include Beijing, Hong Kong, Kuala Lumpur, Manila and Bangkok was found to be more than 23%. Furthermore, the prevalence of overweight and obesity in Japanese males is 24.5% and 2.3% respectively whereas overweight women are 17.8% and obese women are 3.4%.

As for Malaysia, has also become one of the countries with rapid rise of obesity as the public has a dramatic change in their lifestyle, regardless of the resultant changes in food and nutrition as well as the presence of awareness of health concern in the society. Khor (2012) reported that there is a three-fold increase in obesity prevalence among adults, surging from 4.4% to 14% over the 10-year period. Furthermore, the prevalence of overweight and obesity in Malaysia studied by Tee (2002) showed 20.7% and 5.8% respectively.

Apart from that, the overall national prevalence of obesity among Malaysians aged 15 years and above was 11.7% whereby females showed a significantly higher prevalence of obesity compared to males (Rampal *et al.*, 2007). Rampal *et al.*, (2007) stated the prevalence of obesity was highest amongst the Malays (13.6%) and Indians (13.5%) followed by the indigenous group of Sarawak Bumiputera (10.8%) and the Chinese (8.5%). Azmi *et al.*, (2009) showed that there is no significant difference in the prevalence of obesity in rural or urban areas.

2.2. Causes of obesity

It is important to know the causes of obesity to prevent it and avoid further complications associated. In the guideline for the prevention of obesity (MASO, 2005), the cause of obesity can be divided into the imbalance of energy expenditure, poor eating habits, lack of physical activity, psychosocial factors and cultural background.

According to Bouchard (2008), energy imbalance refers to the difference between the calorie intake and output on the same day. It can be divided into positive energy balance when the energy intake is higher than output and negative energy balance when the energy output is greater than the input. This concept had been explained in the work of Hill (2006). Therefore, an increase in weight gain is indicated as a positive energy balance due to the interaction between the behavioural and environmental factors that affect the energy intake and expenditure. Behaviour pattern such as diet and physical activity were the main causes of daily fluctuations in energy balance while an obesigenic environment such as increased food availability, high energy-rich food supply and decreased need for physical activity encouraged a positive rather than negative energy balance (Hill *et al.*, 2003).

There is also an association between food availability and the upward shift in the population dietary pattern that lead to an increase in the obesity rate in Malaysia (Khor, 2012).